

Using HIT to Eliminate Disparities: A Focus on Solutions
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Responses to Queries

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1. *What do you see as the greatest risks posed by the implementation of HIT in relationship to potentially increasing disparities in health processes and outcomes?*

Overall, the implementation of HIT has the potential to increase health disparities among “at risk” groups such as older adults, minorities, and those of lower SES status. Specifically, the potential risks for these groups include lack of access to care, reductions in healthcare quality, and safety risks.

This is very problematic as these populations are often those most in need of care. For example, the majority of older people have at least one chronic condition and many have multiple conditions. In 2002, older people averaged more contacts with doctors than persons of all ages and had about four times the number of days of hospitalization as did people under the age of 65 (Administration on Aging, 2003). Clearly this is an important consideration given the current demographics of the population; one of the fastest growing subgroups is the oldest old who are most likely to need healthcare.

There are also persistent gaps in health status among Americans of different racial and ethnic groups. For example, the incidence of cervical cancer, hypertension, diabetes, tuberculosis, and HIV infection is higher among ethnic minorities such as African Americans and Hispanics than Whites (Office of Minority Health & Health Disparities, 2009).

In addition, these groups are also the most likely to have limited access to HIT. For example, recent data from the Pew report indicates that although Internet access is fairly pervasive in the adult population (18+ years), it is lower among older adults, minorities, those who are physically challenged, and of lower socio-economic status. The same trends are true for broadband access, an essential component of most HIT applications. In addition, most HIT applications have been designed without consideration of the needs and characteristics of diverse user groups and thus have increased the complexity of the demands of healthcare engagement. Many forms of HIT place high demands on health literacy skills which also tend to be lower among older adults, ethnic minorities, and those with less education and financial resources. Thus HIT applications may be difficult for many people to use successfully. This not only threatens access to quality care but also imposes potential health and safety risks. These risks can stem from inability to understand information or adequately interpret information and thus acting on a health issue in an inappropriate manner or failing to act, making less than optimal healthcare decision. Safety risks may also arise because of lack of knowledge regarding how to appropriately use an HIT device (e.g., home monitoring equipment).

Meaningful access to HIT requires: awareness of technology, access to needed technology and technical support, requisite knowledge and skills to use the technology and the ability to

understand and integrate the content of the information and use the information appropriately.

2. *What are you, or others with whom you work, doing (or planning to do) to reduce the risk of exacerbating disparities as HIT is implemented across the county?*

I am currently the Director of the Center for Research and Education on Aging and Technology Enhancement (CREATE), a multi-site Center (University of Miami Miller School of Medicine, Georgia Institute of Technology, Florida State University), funded by the National Institutes on Aging that is concerned with ensuring that older adults have access to technology, can successfully use technology, and that the potential benefits of technology can be used by older adult populations. A primary focus of CREATE is on healthcare applications. For example, at the University of Miami Miller School of Medicine, my group, has been investigating Internet-based health applications. We are examining the extent to which older adults, especially at risk older adults, can access, integrate and understand health information on the Internet and the impact of access to this information on health outcomes and patient/physician relationships. We are also trying to understand barriers to meaningful access and potential intervention strategies such as training or modifications in interface design. We are also examining the ability of older adults to use patient portals of EMR systems. In addition, we are examining other user characteristics such as health literacy and cognitive skills which impact on use of these systems. We have also recently embarked on a project which is evaluating the acceptability, feasibility, and usability of a telemonitoring system that permits wireless transfer of physiological data to health care providers in clinical settings among hypertensive older adults who live in rural locations in South Florida.

I am also an investigator on a recently funded project (NIH) that involves Christina Zarcadoolas (PI, Mount Sinai School of Medicine) and Maxine Rockoff (Columbia University) that is examining the health literacy requirements and usability of patient portals of current EMR systems. Our target population is lower SES patients. In addition, Maxine, Christina and I are working with Dr. Neil Calman and his group at the Institute for Family Health (IFH) (NYC) to evaluate the literacy and usability requirements of the patient portal being implemented by the IFH. Our goals are to understand factors affecting patient adoption of the system and to suggest guidelines for system design so that it can be effectively used by IFH's patient population.

3. *What research is being done, or needs to be done, in this area to inform the HIT Policy Committee in trying to establish guidelines that will move providers to implement methods of using HIT to reduce disparities?*

As illustrated, in the response to query # 2, there are several groups looking at the ability of patient populations to use HIT systems. However, there is a great need for more research in this area. Specifically, we need to have a greater understanding of the barriers to the adoption of HIT and in the same vein we need to develop strategies to enhance and ensure "meaningful" access. We also need to have a more user-centered approach to the design of these systems. This implies having an understanding of the needs and characteristics of the diverse user groups of HIT and including representatives from these groups in the design and evaluation of HIT systems. We

also need data on the impact of the use of these systems on health outcomes. There is clearly a lack of hard evidence regarding impact.

4. *With patient and family engagement in care at the forefront of our thinking about improving our Nation's health, what particular strategies would you recommend to us as potential meaningful use requirements in 2013 and 2015 for the vulnerable populations we have asked you to address?*

As noted in the above response, we need a clear understanding of the diversity of user groups who will interact with HIT. This includes patients, families, and healthcare providers. We also need to understand characteristics (e.g., cognitive abilities, health literacy, technology literacy, environmental contexts) of users, common and unique, that impact on the use of HIT systems. In addition, we need to understand the needs, abilities, and preferences of users as well as the demands (sensory/perceptual, cognitive, physical, social and economic) imposed on users by HIT systems. This necessitates including users in the design and evaluation of HIT systems and the use of techniques such as focus groups, usability testing, health literacy load analysis, task analysis, etc. to gather the requisite information. In addition, this requires multi-disciplinary teams to investigate these issues that include designer of HIT systems, clinicians, social-behavioral scientists and Human Factors Engineers. Finally, there need to funding vehicles to support these types of projects. These mechanisms should be joint endeavors, where possible, between the government and private industry.

5. *How can the meaningful use of HIT specifically reduce a health disparity?*

Meaningful use of HIT applications has vast potential to reduce healthcare disparities and improve the health and well-being of patient populations. For example, HIT can provide patients with increased access to information on illnesses/diseases and treatment options thus allowing them to have a better understanding of healthcare options, ask more well-informed questions, and make more well-informed decisions on healthcare and treatment options. HIT applications can also provide easier access to a wider array of services, especially for rural and underserved patients; enhanced knowledge of resources; and enhanced access to social support (e.g., distant family members and peer support groups). In addition, HIT applications can help those with chronic illnesses and conditions to remain at home. These applications can also improve the logistics of care (e.g., permits asynchronous communication, reduce the need for patients and healthcare providers to travel) and ultimately reduce healthcare costs.

6. *What specific HIT applications have been used to address health literacy (panel 1)?*

I am unaware of specific applications being used to address health literacy. However, there are efforts underway to develop better measures of health literacy; develop design aids to reduce health literacy demands and to enhance the usability of current and future systems.

7. *Please share any relevant evidence on your topic.*

My colleagues and I have published several manuscripts regarding the impact of individual characteristics such as age, health literacy, technology experience and cognitive abilities on successful use of HIT applications. We have also published information on factors impacting access to technology among underserved groups such as older adults. We have also published evidence indicating that user groups such as older adults have difficulty using ehealth applications such as health websites and government health applications such as the Medicare website.